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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,980	02/09/2004	Luc Vanmaele	27500-GN03027	9601

7590 02/21/2006

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EXAMINER

LEE, SIN J

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/774,980	Applicant(s) VANMAELE ET AL.	
	Examiner Sin J. Lee	Art Unit 1752	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 02 February 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

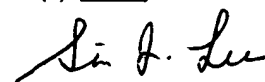
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: 13,14,17,22,26-53,55,57 and 58.
Claim(s) objected to: _____.
Claim(s) rejected: 1-6,10-12,15,16,18,21,23 and 24.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
Please see attached detailed action.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.



Sin J. Lee
Primary Examiner
Art Unit: 1752

DETAILED ACTION

1. Applicants canceled claims 7-9, 25, 54 and 56.

Claim Rejections - 35 USC § 103

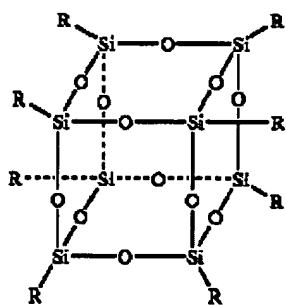
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-6, 10-12, 15, 16, 18, 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al (6,110,987) in view of Nguyen et al (US 6,664,024 B1).

Kamata teaches a *photocurable composition* comprising a compound with an ethylenically unsaturated bond, a cationic dye, a quaternary boron salt sensitizer, and an *UV radical polymerization initiator* (see claim 1). ***In addition***, in col.14, lines 35-50, Kamata teaches that one or more coloring materials selected from *coloring pigment*, coloring dyes and bright pigments may be used in his photocurable composition. Kamata also teaches that the coloring pigments include known organic and *inorganic pigments*. Based on this teaching, it would have been obvious to one skilled in the art to use organic and inorganic pigments as Kamata's coloring materials with a reasonable expectation of obtaining a photocurable composition which gives cured products having an excellent appearance without coloring caused by the polymerization initiator, even with curing compositions comprising coloring materials with strong hiding powers such as pigments and coloring dyes and including materials with poor UV light transmittance. Kamata furthermore teaches that the coloring materials may be added in the amount of 0-200 parts by weight to 100 parts by weight of the compound with an ethylenically

unsaturated bond. This range overlaps with present range of claim 1 and thus would render present range *prima facie* obvious. In the case "where the [claimed] ranges overlap or lie inside ranges disclosed by the prior art," a *prima facie* case of obviousness would exist which may be overcome by a showing of unexpected results, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). Therefore, Kamata's teaching renders obvious present colorant of claim 1.

Kamata states that his composition can be used in the fields of painting, adhesives, tackifiers, *inks* and holographic materials (col.27, lines 39-42). As one of examples for the compound having an ethylenically unsaturated bond, Kamata includes (*meth*)acrylic polyfunctional polyorganosilsesquioxane (col.12, lines 66-67, col.13, lines 1-8, lines 37-38, lines 50-51). Kamata does not teach detail as to what specific compound can be used as the (*meth*)acrylic polyfunctional polyorganosilsesquioxane.

Nguyen teaches the use of following polyhedral oligomeric silsesquioxane (POSS) compound in a *photocurable* composition in order to provide superior thermal stability and mechanical properties to the cured product (see col.2, lines 16-25, col.4, lines 49-67, col.5, lines 1-14);



Formula I

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As one of preferred examples of the compound of Formula I, Nguyen teaches (col.5, lines 25-30)

3-(3,5,7,9,11,13,15-Heptacyclopentylpentacyclo
[9.5.1.1^{3,9}.1^{5,15}.1^{7,13}]octasiloxan-1-yl)propyl meth-
acrylate (available from Aldrich Chemical, Oakville,
Ontario).

Based on Kamata's teaching (that *(meth)acrylic* polyfunctional polyorganosilsesquioxane can be used in his photocurable composition as his compound having an ethylenically unsaturated bond) in view of Nguyen's teaching (that using the POSS compound such as

3-(3,5,7,9,11,13,15-Heptacyclopentylpentacyclo
[9.5.1.1^{3,9}.1^{5,15}.1^{7,13}]octasiloxan-1-yl)propyl meth-
acrylate (available from Aldrich Chemical, Oakville,
Ontario).

in a photocurable composition provides superior thermal stability and mechanical properties to a cured product), it would have been obvious to one of ordinary skill in the art to use Nguyen's POSS compound in Kamata's photocurable composition as his compound having an ethylenically unsaturated bond in order to provide superior thermal stability and mechanical properties to his cured product. Thus, Kamata in view of Nguyen would render obvious present POSS of claims 1-4 (present n being 8, seven of present R groups being alkyl groups and the other R group being a propyl *methacrylate* group). Therefore, Kamata in view of Nguyen would render obvious present inventions of claims 1-5, 10, 11, 23, and 24 (it is the Examiner's position that the composition taught by Kamata in view of Nguyen would inherently have the present viscosity range of claim 23 and would inherently be capable of being a radiation curable ink-jet ink

composition as presently recited in claim 24 because the composition taught by Kamata in view of Nguyen teaches the present composition of claim 1).

With respect to present claim 6, Kamata teaches (col.12, lines 63-65) that his UV radical polymerization initiators may be used in combinations of 2 or more. Therefore, Kamata in view of Nguyen would render obvious present invention of claim 6.

With respect to present claim 12, a phthalo-cyanine blue pigment (present Pigment Blues) is exemplified in Kamata's Table 2 as his coloring material. Kamata also includes carbon black as one of examples for his pigments (see col.14, line 42). Thus, Kamata in view of Nguyen would render obvious present invention of claim 12.

With respect to present claims 15 and 16, Kamata teaches (col.13, lines 1-8) that 2 or more of his compound having at least one radical polymerizable ethylenically unsaturated bond can be used, and urethane acrylate ("AT-600") is exemplified in his Table 2 as a compound with ethylenically unsaturated bond. Based on this teaching in view of Nguyen, it would have been obvious to one of ordinary skill in the art to use the combination of Nguyen's POSS compound (as discussed above) and urethane acrylate as Kamata's compounds with ethylenically unsaturated bond with a reasonable expectation of obtaining a photocurable composition which provides a cured product with an excellent appearance. Thus, Kamata in view of Nguyen would render obvious present inventions of claims 15 and 16.

With respect to present claim 18, Kamata teaches (col.15, lines 7-21) that his photocurable composition may be used in a form diluted with an organic solvent.

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Therefore, Kamata in view of Nguyen would render obvious present invention of claim 18.

With respect to present claim 21, Kamata teaches (col.15, lines 29-32) that his photocurable composition can contain an antioxidant. Therefore, Kamata in view of Nguyen would render obvious present invention of claim 21.

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al (6,110,987) in view of Nguyen et al (US 6,664,024 B1) as applied to claim 1 above, and further in view of Wolk et al (6,140,009) and Lee et al (US 2004/0162397 A1).

Kamata in view of Nguyen is discussed above in Paragraph 3. Kamata teaches (col.15, lines 29-34) that his photocurable composition can contain a *conductive material*, but without giving any detail as to what kind of conductive material can be used. Wolk et al state (col.13, lines 64-67, col.14, lines 1-3) that conductive materials include metals, alloys, metallic compounds, metal oxides, conductive ceramics, conductive dispersions, and *conductive polymers* including polyaniline. As evidenced by Lee, [0004] and [0006], conductive polymers are known to be variously processed, lightweight, and producible in commercial quantities and also, polyaniline is known to be relatively inexpensive and chemically very stable material. Based on these teachings, it would have been obvious to one skilled in the art to use a conductive polymer such as polyaniline in Kamata's photocurable material as his conductive material because Wolk and Lee teach advantages of using conductive polymers such as polyaniline.

Therefore, Kamata in view of Nguyen, and further in view of Wolk and Lee would render obvious present inventions of claims 19 and 20.

Allowable Subject Matter

5. Claims 13, 14, 17, 22, 26-53, 55, 57 and 58 are allowed. Kamata (either alone or in view of the other cited references) does not teach or suggest present vinyl ether (meth)acrylates of claims 13, 42 and 55. Kamata does not teach or suggest present solvent (water) of claims 17 and 46. Kamata does not teach or suggest present dendrimer of claim 22.

Response to Arguments

6. Applicants argue that one skilled in the art would be led away from the invention of claim 1 wherein a pigment is used as the colorant because Kamata et al states that in the absence of a cationic dye, inadequate curing is observed. However, Kamata is not teaching replacing the cationic dye with the pigment. As explained above, Kamata teaches a *photocurable composition* comprising a cationic dye, and ***in addition***, Kamata teaches that one or more coloring materials selected from *coloring pigment (such as organic and inorganic pigments)*, coloring dyes and bright pigments may be used in his photocurable composition.

Applicants argue that Nguyen teaches that colorants deteriorate the mechanical and thermal properties and thus they rely on color generating compounds. However, Nguyen's color generating compound is a colorant (according to Merriam-Webster dictionary, a colorant is a substance used for *coloring a material* such as dyes and pigments). For example, Nguyen includes xanthene derivatives (which are

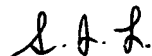
colorants) as one of preferred examples for his color generating compounds (see col.4, lines 15-17). Therefore, applicants' argument that the rejection based on a motivated combination of Kamata and Nguyen is improper is found to be unpersuasive.

For the reasons stated above, present rejections still stand.

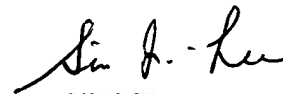
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
February 15, 2006



SIN LEE
PRIMARY EXAMINER